VG 6328A dual-mode Bluetooth transparent transmission

Module Specifications

(V1.0)

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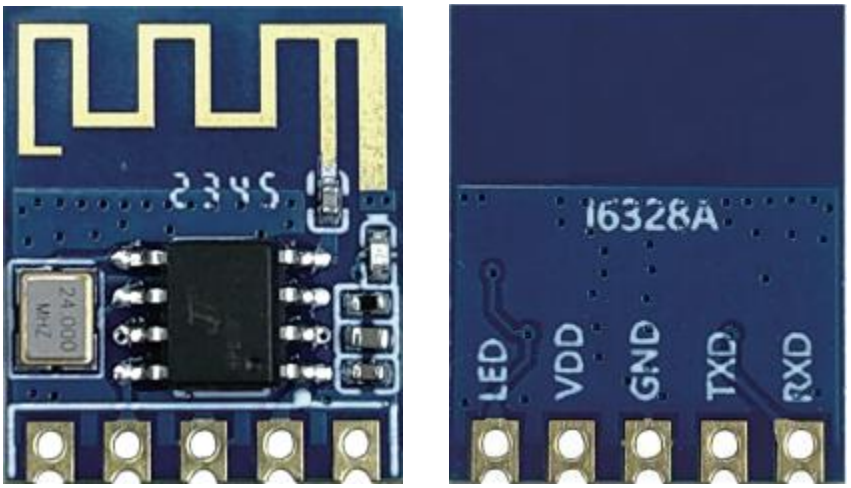
Document Revision History

Version	Change Date	Change Description
V1.0	2023-12-20	Initial release

1. Module Introduction



(front) (back)

The module is subject to the actual product

1.1 Module basic specifications

- VG 6328A Bluetooth transparent transmission is a slave Bluetooth transparent transmission module.
- ATInstruction mode: Users can query or configure the module parameters through the corresponding instruction set .
- Serial port default parameters: baud rate (115200baud) , 8data bits, 1stop bits and no parity bit.
- The data packet sent by the serial port to the module should not exceed 255 bytes, otherwise it will overflow and cause data errors.
- The data packet sent by the APP to the module should not exceed 4096 bytes.
- Broadcast interval: 100 MS .
- supportATMode: Users can also use the serial port ATInstructions to modify the parameters supported by the module (For example: serial port baud rate, Bluetooth device name, etc.).
- Support transparent transmission mode: users can communicate with mobile devices through the serial port of the module; mobile devices can communicate with mobile devices through the APP Write to the module and monitor the data from the serial port. The written data will be sent to the User device; similarly, after the module receives the data packet from the serial port, it will automatically forward it to the mobile device.
- The I6328A Bluetooth module can connect to BLE Bluetooth and classic Bluetooth at the same time and communicate at the same time. (BLE / BT), please use AT command to turn off the other one, the module will remember the current command.

1.2 Application Areas

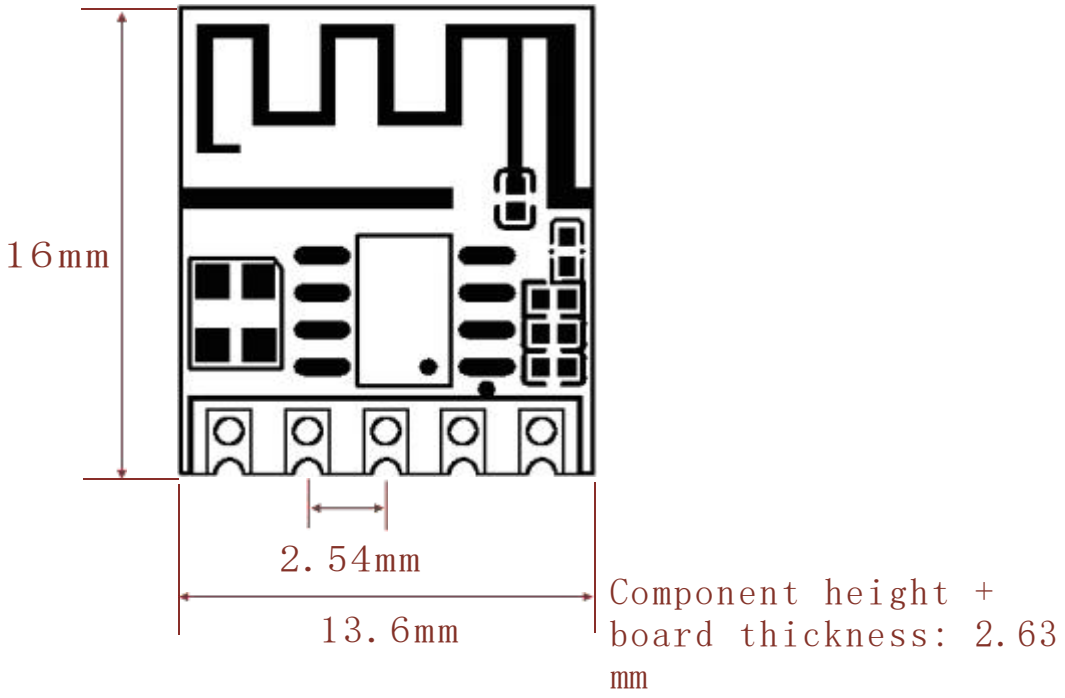
1. Personalized selfie: selfie device, vibrato device;
2. Smart lighting: Bluetooth lighting control for light strips, light bulbs, ceiling lights, etc.; 3. Smart locks: sockets, switches, door locks, shared products, etc.
4. Intelligent remote control: OTT box, voice remote control and other infrared trial production;
5. Household appliances: various small appliances such as tea bar machines, foot bath trays, toilets, electric hot pots, etc.; 6. Sports and health: health scales, toothbrushes, wristbands, sports equipment, medical tests;
7. Smart toys: all kinds of toy products;
8. Gaming office: keyboard, mouse, game controller;
9. Smart printing: Bluetooth printer, error-correcting printer, etc.

2. Module parameters

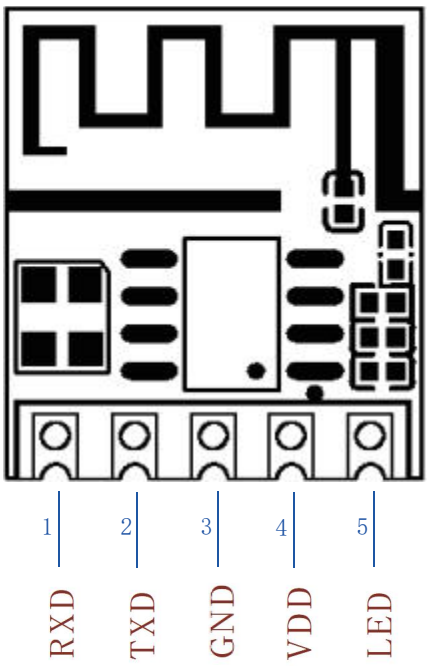
parameter	performance	Remark
Bluetooth Specifications	BLEV5.3+BR+EDR	
Operating voltage	1.8 to 4.2V Recommended operating voltage 3.3V	
Operating temperature	-40° C ~ +85° C	
Operating frequency	2402MHz～2480MHz	
BLE broadcast, not connected	50-200 uA	
Connected but no data transfer	60-500 uA	
Connected with data transmission	5mA	
Transmit power	0dBm	
Receiving sensitivity	-92dBm	
Modulation	GFSK	
Communication interface	UART	
Dimensions	16×13.6×2.63 mm	

3. Module Description

3.1 Module size



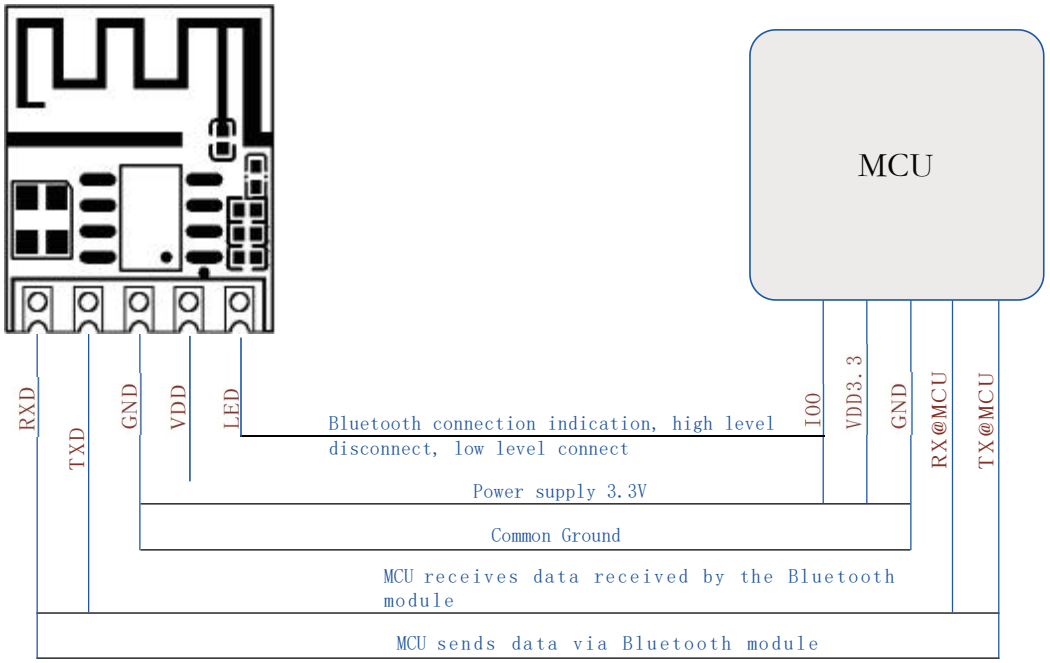
3.2 Module pin function definition diagram



3.3 Pin Function Description

Serial number	Pin Definition	Pin Type	describe
1	RxD	I	Serial Port RX Data receiving end
2	TXD	O	Serial Port TX Data sender
3	GND	GND	Module Ground
4	VDD	VDD	Module power supply
5	led	I	Bluetooth connected is 0, Bluetooth disconnected is 1, when BLE / BT When both are connected, only the last status is shown

3.4 Module connection diagram



4. Introduction

1. Power supply VCC , GND It can work normally, broadcast normally, and connect normally.
2. LED : If the Bluetooth module is not connected successfully, the LED is high level. If the Bluetooth module is connected successfully, the LED is low level.
3. The default baud rate of the module serial port is: 115200, data bit 8, check bit N, stop bit 1.

5. Bluetooth Communication UUID

BLE Bluetooth Default GATT Services and Features UUID (UUID Can be customized according to customer requirements, please contact us)

Service UUID: 0xFFE0 Characteristics UUID:

--- 0xFFE 1 : Write Without Response [Downlink data, data flow direction APP --> UART 】 --- 0xFFE 2 : Notify 【Uplink data, data flow direction UART --> APP 】

6. Testing Tools

1. iPhone Recommended LightBlue
2. Android It is recommended to use Nrf Connect

7. Query instructions

Note: When the serial port tool selects the carriage return and line feed option, the MCU program adds a carriage return and line feed (0X0D 0X0A).

Instruction Description	instruction	Response	Parameter Description
Read device FLASH UID	AT+FUID	EB 60 12 11 20 04 08 08 06 09 15 00 C7 00 50 FF	Return 16 FLASH UID Hexadecimal address
Check the firmware version	AT+VERS	XXXX	Return software version number 2 bytes
Read Bluetooth connection status	AT+CONN	XX	Returns a single byte reflecting the status: 1, no connection, return 0X04 2. BLE connection, return 0X10 3. Classic Bluetooth connection, returns 0X0F 4. BLE & SPP dual connection, return 0X1B
Get SPP Bluetooth name	AT+SPGN	XLBT (Example)	Returns the corresponding SPP Bluetooth name string
Get BLE Bluetooth name	AT+LEGN	XLBLE (Example)	Returns the corresponding BLE Bluetooth name string
Get SPP Bluetooth address	AT+SPGA	XXXXXXXXXXXX	Returns 6 bytes of address data, output order The address is consistent with the APP display
Get BLE Bluetooth address	AT+LEGA	XXXXXXXXXXXX	Returns 6 bytes of address data, output order The address is consistent with the APP display

8. Setting instructions

Note: When the serial port tool selects the carriage return and line feed option, the MCU program adds a carriage return and line feed (0X0D 0X0A).

Instruction Description	instruction	Response	Parameter Description
Enter command mode	AT+ENAT	OK \r\n	The serial port cannot send data to the APP until Enter data mode, the module resets and automatically exits command mode. All AT commands need to enter command mode first. AT command mode can work.
Entering data mode	AT+EXAT	OK \r\n	AT command is invalid, the module resets automatically Data mode.
Enable BLE broadcast	AT+LEON	OK \r\n	APP can search for BLE module devices, factory It is enabled by default, and the setting command will be saved after power failure.
Turn off BLE broadcasting	AT+LEOF	OK \r\n	The APP cannot search for BLE module devices, and the setting commands will be saved after power failure.
Enable SPP broadcast	AT+SPON	OK \r\n	The APP can search for BREDR module devices. The factory default is on, and the setting command will be saved when the power is off.
Disable SPP broadcast	AT+SPOF	OK \r\n	The APP cannot search for BREDR module devices. The setting command will be saved after power off.
Modify SPP name	AT+SPNAXXXX	OK \r\n	The characters after AT + SPNA are the displayed Bluetooth name. It is no more than 20 bytes and can be set to After the success, the AT command needs to be reset to take effect . The command will be saved after power off
Modify BLE name	AT+LENAXXXX	OK \r\n	The characters after AT + LENA are the displayed Bluetooth name. It is no more than 20 bytes and can be set to After the success, the AT command needs to be reset to take effect . The command will be saved after power off.
Set SPP address	AT+SPAD0123456789AC	OK \r\n	AT + SPAD The characters behind are SPP Bluetooth address 6 bytes. After successful setting, AT is required to The command will take effect after reset , and the setting command will be saved when power is off.
Setting the BLE address	AT+LEAD234567890ACD	OK \r\n	AT + LEAD The characters behind are BLE Bluetooth address 6 bytes. After successful setting, AT is required to The command will take effect after reset , and the setting command will be saved when power is off.
Disconnect SPP	AT+SPNC	OK \r\n	The module actively disconnects
Disconnecting from BLE	AT+LENC	OK \r\n	The module actively disconnects
Set the baud rate to 9600	AT+BAUD0	OK \r\n	AT command reset is required to take effect . Save after power off.
Set the baud rate to 19200	AT+BAUD1	OK \r\n	AT command reset is required to take effect . Power-off save

Set the baud rate to 38400	AT+BAUD2	OK \r\n	AT command reset is required to take effect . Power-off save
Set the baud rate to 57600	AT+BAUD3	OK \r\n	AT command reset is required to take effect . Power-off save
Set the baud rate to 115200	AT+BAUD4	OK \r\n	AT command reset is required to take effect . Power-off save
Bluetooth module reset	AT+REST	none	After successfully setting the command you want to set, enter To make the command effective, first set the After the command is set successfully, reset it. Effective
Restore factory settings	AT+RDEF	none	Restoring factory settings will do the following: 1. BLE name is XLBLE 2. The SPP name is XLBT 3. BLE TheMAC address is the lower 6 bytes of the UID 4. SPP TheMAC address is the lower 6 bytes of the UID 5. The baud rate is 115200 6. The setting parameters are saved after power failure 7. Reset the module.

9. What else do we offer?

1. Provide the programmed chips and mount them on the customer's board to give the customer the best cost control. 2. Use the crystal oscillator that is currently used on our module, or purchase a qualified crystal oscillator under our guidance . 3. Provide paid customized development for customers (contact us via WeChat and mobile phone number).

10. Contact Us

Shenzhen Vollgo Technology Co., Ltd.

Contact number: 0755-23040053

Company website: www.vollgo.cn

Address: Room 1411, Building A, Zhiyun Industrial Park, No. 13 Huaxing Road, Henglang Community, Dalang Street, Longhua District, Shenzhen

